

Appl. No. 10/528,305  
Reply to Office Action of June 4, 2008

**Amendments to the Drawings:**

Enclosed are replacement sheets showing amended Figs. 4, 9 and 32. As required by the Examiner, these figures are indicated to be "PRIOR ART".

**REMARKS/ARGUMENTS**

A clerical error is corrected in the units of length for particles in Claims 4, 5 and 17-20. This is an obvious correction to an obvious error. Also the Examples support the change (see e.g. Example 6 on page 23).

Regarding item 2, Figs. 4, 9 and 32 are now labeled as "Prior Art".

Regarding item 5 of the Office Action, the claims are amended to remove the phrase "any one of."

Regarding item 4 of the Office action, the Examiner considers that there is no antecedent basis for the subject matter of Claims 4 to 6 and 17 to 20 in the specification. Applicants respectfully disagree.

Ipis verbis support is not necessary to support claims (see Ex parte Holt 19 USPQ2d 1211, 1213 B PAI 1991). The Patent Office has the burden in the first instance to explain such a rejection. If the following explanation is insufficient, it is requested that the PTO meet that burden. It is understood that the incorrect unit of length corrected above and the error in

Example 10 of the specification, may have necessitated this rejection:

The higher numbered example(s) of the present invention uses conditions and results of the lower numbered example(s). In the specification, the description for the higher numbered example is made to show difference between the higher numbered example and the lower numbered example(s). Accordingly, it should be understood that preferable conditions in the lower numbered example(s) are adopted in the higher numbered example.

Example 6 shows that the average particle sizes of 2.0-50 $\mu$ m are preferable for the alloy magnetic powders by showing that the alloy magnetic powders having average particle sizes of 1.0 $\mu$ m and 75 $\mu$ m are undesirable (see paragraphs 0112 and 0113 and table 2 of US Patent Application Publication No. US2006/0280921 A1 corresponding to the present application). Further, Example 6 shows the intrinsic coercive force of 5kOe or more is obtained (see paragraph 0112 of the publication).

Example 7 shows that a thermoplastic resin of 50vol% having a softening point of about 300°C is used as a binder (see

paragraph 0114 of the publication). Accordingly, it is clearly preferable that the Curie temperature is 300°C or more.

As mentioned above, the conditions of the average particle sizes of 2.0-50µm, the intrinsic coercive force of 5kOe or more, and the Curie temperature not less than 300°C are derived from the present specification. Thus, the claimed subject matters recited in claims 4, 17 and 18 are supported by the specification.

Example 7 further shows it is still preferable that the intrinsic coercive force is larger than 8kOe (see paragraphs 0114 - 0118 and Fig. 18 of the publication). In addition, Example 9 shows it is preferable that the intrinsic coercive force is larger than 9.5kOe (see paragraphs 0122 - 0125, Table 3 and Fig. 20 of the publication). Though the lower limit of the still preferable range of the intrinsic coercive force is not mentioned definitely in the present specification, the client wants to try asserting that it can be read from Fig. 18 that the lower limit of the still preferable range of the intrinsic coercive force is 10kOe.

Example 8 shows it is still preferable that the Curie temperature is larger than 400°C. Though the lower limit of the still preferable range of the Curie temperature is not mentioned definitely in the present specification, the client wants to try asserting that it can be read from Fig. 19 that the lower limit of the still preferable range of the Curie temperature is 500°C.

Example 9 shows that the average particle size of 2.5 to 50µm is still preferable (see paragraphs 0122 - 0125 and Fig. 20 of the publication). In this range of the average particle size, the intrinsic coercive force is larger than 10kOe.

As mentioned above, the conditions of the average particle sizes of 2.5-50µm, the intrinsic coercive force of 10kOe or more, and the Curie temperature not less than 500°C are derived from the present specification. Thus, the claimed subject matters recited in claims 5 and 19 are supported by the specification.

Concerning the correction to Example 10, Example 10 shows the  $\text{Sm}(\text{Co}_{\text{bal}}\text{Fe}_{0.15-0.20}\text{Cu}_{0.06-0.08}\text{Zr}_{0.02-0.03})_{7.0-8.5}$  magnet. However, the composition formula is a clerical error.  $\text{Sm}(\text{Co}_{\text{bal}}\text{Fe}_{0.15-0.25}\text{Cu}_{0.06-0.08}\text{Zr}_{0.02-0.03})_{7.0-8.5}$  magnet is correct and the change is made at page 30 to conform to original Claim 6. Since the composition

formula of Example 10 is corrected based on Claim 6, Claims 6 and 20 (and their dependent claims) are supported by the specification.

Regarding item 7 of the Office action, concerning the timing of powder magnetization, the step of magnetizing the magnetic powder prior to mixing the magnetic powder with the resin is added to claim 10 and its dependent claims.

Claim 1 is rejected as anticipated by Lyman or one of two Ozaki (JP documents).

Claim 1 is amended to further distinguish over the art.

The phrase by applying a magnetic field ranging from 5 T to 10 T is supported by the paragraph [0072] of the US Patent Application Publication No. US2006/0280921 A1 (see present specification page 12, lines 13-23).

The phrase at a weight ratio within a range from 70 : 30 to 97 : 3 is supported by the paragraph 0082 of the publication.

The phrase with 10 poises or more is supported by the paragraph [0075] of the publication (present specification Example 1).

The phrases the viscous material is located at a predetermined position of a magnetic device in contact therewith and ranging from 30 mT to 500 mT is supported by the paragraph [0077] of the publication (specification page 13, third full paragraph).

Lyman discloses a method for producing permanent magnets. However, Lyman does not teach or suggest mixing an alloy magnetic powder magnetized and a resin at a weight ratio within a range from 70:30 to 97:3 to obtain a viscous material with 10 poises or more. Lyman merely discloses introducing magnetic material powders into a hardenable resinous material. Further, Lyman does not teach or suggest arranging a viscous material at a predetermined position of a magnetic device in contact therewith.

In addition, Layman does not teach or suggest applying a magnetic field ranging from 5T to 10T to an alloy magnetic powder. Lyman's method exposes the magnetic material powders to a high intensity magnetic field such as the order of 100,000 Gauss (=10T) or greater (see column 6, lines 6-10). Accordingly, Lyman's method needs a large scale, complicated magnetization coil.

Each of Ozaki 507 and 047 discloses a method for producing a permanent magnet that uses injection molding. In the injection molding, a viscous material is injected into a space formed by die assemblies. Accordingly, Ozaki 507 and 047 do not teach or suggest arranging a viscous material at a predetermined position of a magnetic device in contact therewith. Furthermore, this would need a large scale, complicated magnetization coil. Also, Ozaki 507 and 047 do not teach or suggest mixing a magnetized alloy magnetic powder and a resin to obtain a viscous material with 10 poises or more and applying a magnetic field ranging from 30mT to 500mT to the viscous material to orient magnetically the magnetized alloy magnetic powder included in the viscous material, while the resin is hardened.

Claims 2 and 10 to 12 are rejected over a combination of Masaru and Lyman.

Masaru disclose a method for producing an induction electromagnetic device of a divisional type. The method places a filler including magnetic fluid between divided cores and solidifies the filler with applying magnetic field. However, Masaru does not teach or suggest producing a permanent magnet.



The teaching in Lyman is discussed above. The Examiner relies on Lyman for this rejection, for its teaching of premagnetization of the particles. In view of the differences between the present invention and Lyman, combining this teaching with Masaru does not show or suggest the presently claimed invention.

Adding Kinya to the Lyman and the Masaru combination (Claims 3 and 16 to 20) does not supply missing teaching discussed above.

Kinya discloses a method for producing a bonded magnet that uses compression molding or injection molding. However, Kinya does not teach or suggest applying a magnetic field to an alloy magnetic powder to magnetize the alloy magnetic powder, mixing the magnetized alloy magnetic powder and a resin to obtain a viscous material with 10 poises or more, arranging the viscous material at a predetermined position of the magnetic device in contact therewith, and applying a magnetic field to the viscous material to magnetically orient the magnetized alloy magnetic powder included in the viscous material while the resin is hardened.

In marked contrast, the method of amended Claim 1 includes the following steps.

An alloy magnetic powder magnetized in advance by applying a magnetic field ranging from 5T to 10T is mixed with a resin at a weight ratio within a range from 70:30 to 97:3 to obtain a viscous material with 10 poises or more. The viscous material is located at a predetermined position of a magnetic device in contact therewith. A magnetic field ranging from 30mT to 500mT is applied to the viscous material to orient magnetically the alloy magnetic powder included in the viscous material while the resin is hardened.

According to the method of Claim 1, the viscous material can be formed into a predetermined form without a high-pressure device such as an injection-molding machine since the viscous material has viscosity of 10 poises or more. Furthermore, the bond magnet can be applied to and united with the magnetic device because it is hardened in a state of contacting with the magnetic device. Moreover, the alloy magnetic powder can be oriented while the resin is hardened. Accordingly, the bond magnet can have good magnetic characteristics. In addition, because the

Appl. No. 10/528,305  
Reply to Office Action of June 4, 2008

alloy magnetic powder can be oriented by means of relatively lower magnetic field from 30mT to 500mT, the bond magnet is inexpensive in spite of its high magnetic characteristics.

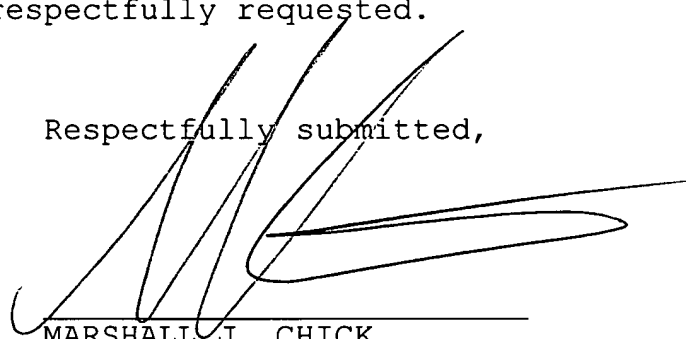
Combining Lyman and Ozaki (Claims 4-6) still cannot provide missing teaching (see discussion above). Neither contains necessary teaching to render the invention obvious.

For the reasons detailed above, it is submitted that the claims are not anticipated by Lyman, Ozaki 507, Ozaki 047, Masaru or Kinya or obvious from any combination thereof.

In view of the above, the rejections are avoided. Allowance of the application is therefore respectfully requested.

Frishauf, Holtz, Goodman  
& Chick, P.C.  
220 Fifth Ave., 16th Floor  
New York, NY 10001-7708  
Tel. No.: (212) 319-4900  
Fax No.: (212) 319-5101  
MJC:sg

Respectfully submitted,



MARSHALL J. CHICK  
Reg. No. 26,853